PRIMETEST 50

Operating Instructions

SEAWARD ELECTRONIC LTD.

Limited Warranty & Limitation of Liability

SEAWARD Electronic Limited guarantees this product to be free from defects in material and workmanship under normal use and service for a period of 1 year. The period of warranty will be effective at the day of delivery.

(c) Copyright 2006
All rights reserved. Nothing from this edition may be multiplied, or made public in any form or manner, either electronically, mechanically, by photocopying, recording, or in any manner, without prior written consent from SEAWARD Electronic Limited. This also applies to accompanying drawings and diagrams.

Due to a policy of continuous development SEAWARD Electronic Limited reserves the right to alter the equipment specification and description outlined in this publication without prior notice and no part of this publication shall be deemed to be part of any contract for the equipment unless specifically referred to as an inclusion within such contract.

DECLARATION OF CONFORMITY

As the manufacturer of the apparatus listed, declare under our sole responsibility that the product:

PRIMETEST 50

To which this declaration relates are in conformity with the relevant clauses of the following standard:

BS EN 61010-1:2001
Safety requirements for electrical equipment for measurement, control, and laboratory use – Part 1: General requirements.

BS EN 61326:1998
Electrical equipment for measurement, control and laboratory user-EMC Requirements

Performance: The instrument operates within specification when used under the conditions in the above standards EMC and Safety Standards.

The product identified above conforms to the requirements of Council Directive 89/336/EEC and 73/23 EEC.

Seaward Electronic Ltd is registered under BS EN ISO9001:2000 Certificate No: Q05356.

Contents

1 Important Information 5
2 Introduction 7
3 Performing Tests 8
3.1 Checking a mains power outlet 8
3.2 Testing a Class I Appliance 9
3.3 Testing a Class II Appliance 11
3.4 Testing a mains cord 12
4 Specification 14
5 Maintenance 14
6 Battery Check 15
6.1 Battery Replacement 15
7 Service and Calibration 16

1 Important Information

These operating instructions are intended for the use of adequately trained personnel.

The following symbols are used in these operating instructions and on the PrimeTest 50.

Caution, risk of electric shock. Indicates instructions must be followed to avoid danger to persons.

Caution, risk of danger. The operating instructions must be adhered to in order to avoid danger.

Before use, ensure unit is clean and dry; visually inspect all leads, connectors, and case. Any damage or wear must be rectified prior to use.

Standard Accessories

	Part Number
PrimeTest 50 unit	347A910
Carry Case	71G082
Black Test Lead 1m	347A002
UK IEC mains cord 0.5m	300A002
Operating Instructions	347A550

Optional Accessories

	Part Number
PATGuard Lite	352A930
PATGuard Workabout	336A910
NiMH Batteries and charger	339A950

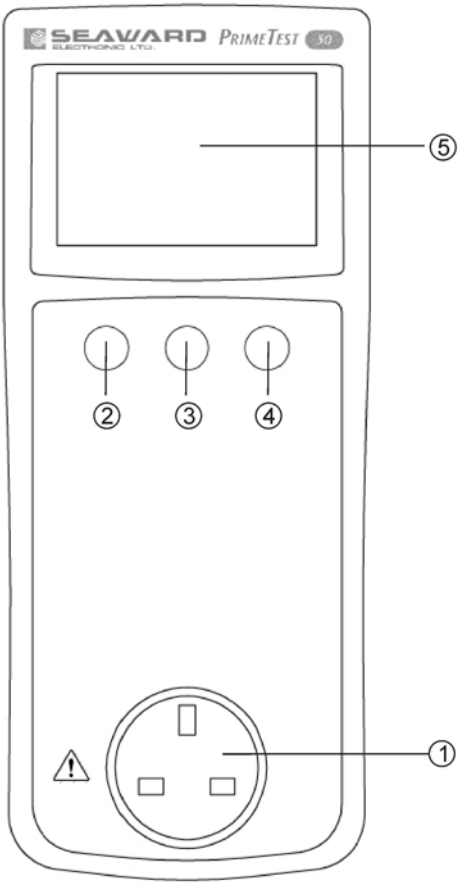


Figure 1. PrimeTest 50 Front View

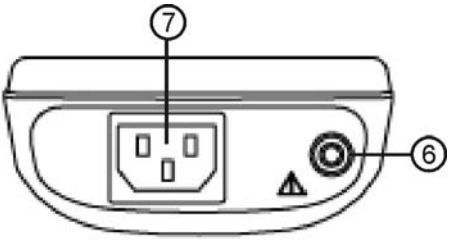


Figure 2. PrimeTest 50 End View

2 Introduction

The PrimeTest 50 is a hand held battery powered unit suitable for carrying out electrical safety checks on:

- Class I appliances
- Class II appliances
- IEC mains leads
- Extension leads
- Mains outlet wiring

Numbers shown in circles e.g. ① refer to figure 1 and figure 2 on page 5.

Test connections on the PrimeTest 50 are:

- Mains socket on front panel ① for connecting the appliance under test.
- 4mm socket on end panel ⑥ for earth test probe
- IEC socket on end panel ⑦ for mains cord testing.

User Interface

The LCD display ⑤ shows test progress, results for individual tests and the overall test result for an appliance or mains cord.

Tests are initiated using the three push buttons:

Power ON/OFF = ② **+** ③ ***until a beep is heard***

Class I appliance test = ②

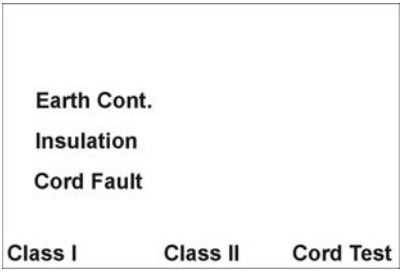
Class II appliance test = ③

Cord / extension lead test = ④

Note: The PrimeTest 50 will automatically switch OFF after approximately 3 minutes if no keys are pressed. The auto switch-off is disabled during a power socket test.

3 Performing Tests

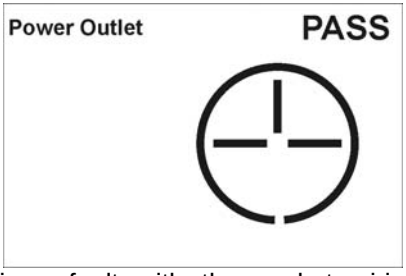
Press keys ②+③ to switch on the PrimeTest 50. When the unit is ready the display will be as shown below.



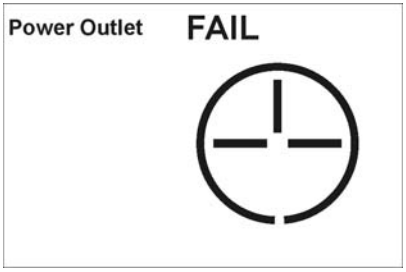
3.1 Checking a mains power outlet

Connect the IEC power cord to the PrimeTest 50 socket ⑦ and plug into the mains power outlet to be tested.

If the mains socket wiring is correct the display will show.



If there is a fault with the socket wiring this is indicated by the display below.



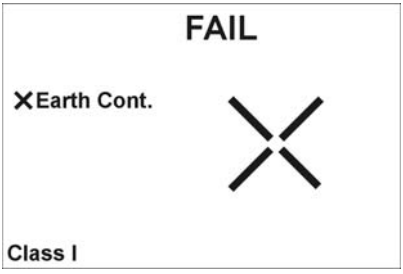
In the event of a failure, disconnect the PrimeTest 50 from the supply and rectify the fault.

⚠ ***Do not leave the PrimeTest 50 permanently connected to a mains supply.***

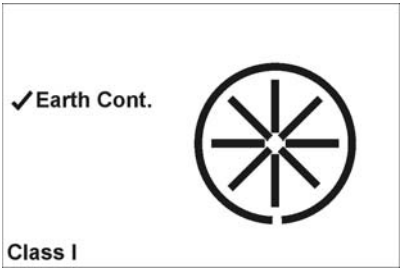
The auto switch-off function is disabled when the PrimeTest 50 is connected to a live mains socket. The unit will beep continually after 3 minutes to remind the user to disconnect from the mains socket.

3.2 Testing a Class I Appliance

- Visually inspect the appliance and mains cord for signs of damage.
- If the appliance passes a visual inspection proceed with the electrical tests.
- Plug the earth test lead into the 4mm socket ⑥ on the PrimeTest 50 end panel.
- Plug the appliance into the PrimeTest 50 front panel mains socket ①
- Connect the earth test probe to an exposed metal part on the appliance.
- If the Appliance under test has an ON/OFF switch, make sure it is in the ON position.
- Press the Class I test key ②
- The PrimeTest 50 will now test the continuity of the protective earth.
- If the measured value is outside acceptable limits a cross is placed next to the ***Earth Cont*** enunciator, a FAIL is indicated and the test sequence is halted.

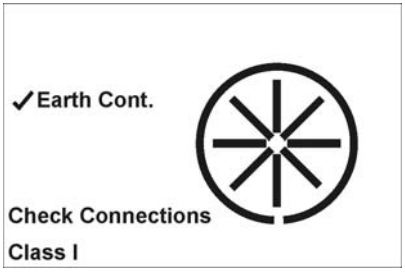


- If the measured value is within acceptable limits a tick is placed next the ***Earth Cont*** enunciator.

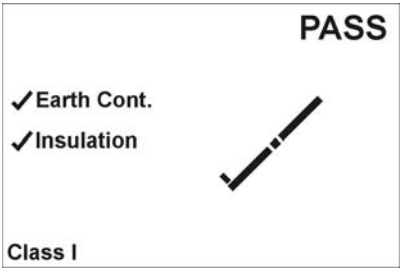


- The unit will proceed with the Insulation test.

Note: The power switch on the appliance under must be in the ON position to perform an insulation test. If no appliance is detected the PrimeTest 50 will display the following.



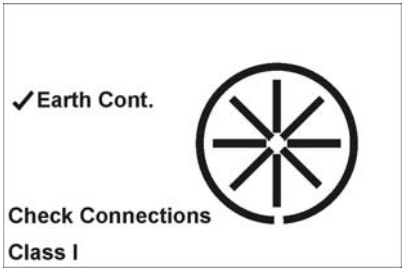
- Check that the appliance power switch is in the ON position. The test will automatically proceed if the appliance power switch is placed in the ON position.
- If the ***Check Connections*** enunciator remains on the display, the load presented by the appliance may be too small for the PrimeTest 50 to detect. In this case, press the test key ② to continue.
- If the Insulation Resistance is greater than the acceptable limit a tick is placed next to the ***Insulation*** enunciator and the ***PASS*** enunciator is illuminated.



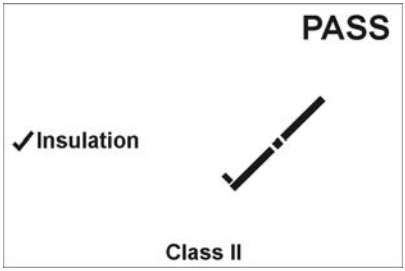
3.3 Testing a Class II Appliance

- Visually inspect the appliance and mains cord for signs of damage.
- If the appliance passes a visual inspection proceed with the electrical tests.
- Plug the earth test lead into the 4mm socket ⑥ on the PrimeTest 50 end panel.
- Plug the appliance into the PrimeTest 50 front panel mains socket ①
- Connect the earth test probe to an exposed metal part on the appliance.
- If the Appliance under test has an ON/OFF switch, make sure it is in the ON position.
- Press the Class II test key ③
- The PrimeTest 50 will now test Insulation Resistance.

Note: The power switch on the appliance under must be in the ON position to perform an insulation test. If no appliance is detected the PrimeTest 50 will display the following.



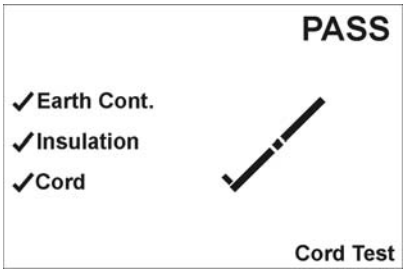
- Check that the appliance power switch is in the ON position. The test will automatically proceed if the appliance power switch is placed in the ON position.
- If the ***Check Connections*** enunciator remains on the display, the load presented by the appliance may be too small for the PrimeTest 50 to detect. In this case, press the test key ③ to continue.
- If the Insulation Resistance is greater than the acceptable limit a tick is placed next to the ***Insulation*** enunciator and the ***PASS*** enunciator is illuminated.



3.4 Testing a mains cord

- Visually inspect the appliance and mains cord for signs of damage.
- If the appliance passes a visual inspection proceed with the electrical tests.
- Plug the mains lead under test into the IEC socket ⑦ and the front panel mains socket ① on the PrimeTest 50.
- Press the cords test key ④
- The PrimeTest 50 will now test the continuity of the protective earth.
- If the measured value is outside acceptable limits a cross is placed next to the ***Earth Cont*** enunciator, a FAIL is indicated and the test sequence is halted.
- If the measured value is within acceptable limits a tick is placed next the ***Earth Cont*** enunciator.
- The unit will proceed with the Insulation test.

- If the Insulation Resistance is lower than the acceptable limit a cross is placed next to the ***Insulation*** enunciator and the test sequence is halted.
- If the Insulation Resistance is greater than the acceptable limit a tick is placed next to the ***Insulation*** enunciator.
- The unit will proceed with the wiring test, checking the live and neutral conductors for short or open circuits or reversed connections.
- If the wiring is correct a tick is placed next to the cord enunciator and a pass is indicated for the sequence.



4 Specification

Earth Continuity

Pass Limit	0.2Ω
Accuracy*	± 0.03Ω
Test current	200mA minimum
Test voltage	9V nominal

Insulation resistance

Pass Limit	1.0MΩ CLI, 2.0MΩ CL II
	2.0MΩ Mains cord
Accuracy	± 0.1MΩ
Test voltage	500V
Test current	>1mA into 500kΩ
Test current	<2mA into 2kΩ

Cord Test

Earth continuity, insulation resistance as above. Check for Live and Neutral open circuit, short circuit or reversed polarity.

*When used with Seaward test lead, Part Number 347A002

Environmental rating

IP40
Operating temperature range 0°C to 40°C, without moisture condensation.
Storage temperature range –25° to 65°. Batteries should be removed prior to storage.
Overvoltage category 300V CAT II

5 Maintenance

Clean only with a dry cloth; do not use solvents.
Before use, ensure unit is clean and dry; visually inspect all leads, connectors, and case. Any damage or wear must be rectified to preserve user safety.

Check the battery contacts and compartment are free of electrolytic contamination.
Any contamination of the battery contacts or compartment should be cleaned with a dry cloth.

6 Battery Check

The PrimeTest 50 is powered from a 6 AA cells which are checked before a test is performed. When the battery voltage is low the ***Low Batt*** enunciator is illuminated. The unit will continue to perform within specification for a limited number of tests, dependent upon the type of the batteries fitted.

When the battery voltage reaches a level where the performance is affected the ***Low Batt*** enunciator will flash and all test keys are disabled. The batteries must be replaced.

6.1 Battery Replacement

Before opening the PrimeTest 50 ensure that it is disconnect all test leads.

- Switch off the unit by pressing and holding keys ② and ③**.**
- Disconnect the black test lead from 4mm test socket ⑥.
- Disconnect the IEC mains cable from the IEC socket ⑦.
- Disconnect the EUT mains cable from the EUT socket ①.
- Place the PrimeTest 50 face down, release the captive screw in the battery compartment cover.
- Remove the battery compartment cover.
- Remove the discharged batteries.
- Insert the replacement batteries into the battery compartment ensuring that the battery polarity matches the marking on the inside of the battery compartment.
- Relocate the battery cover over the battery compartment and fasten in position with the battery cover captive screw.

7 Service and Calibration

To maintain the specified accuracy of the measurement results, the instrument must be recalibrated at regular intervals by either the manufacturer or an **authorised Seaward Service Agent**. We recommend a recalibration period of one year.

Thank you for reading this data sheet.

For pricing or for further information, please contact us at our UK Office, using the details below.

UK Office
Keison Products,
P.O. Box 2124, Chelmsford, Essex, CM1 3UP, England.
Tel: +44 (0)1245 600560
Fax: +44 (0)1245 808399
Email: sales@keison.co.uk

Please note - Product designs and specifications are subject to change without notice. The user is responsible for determining the suitability of this product.